

Claims

1. A process for the preparation of a vanadium/phosphorus mixed oxide catalyst precursor comprising the reaction of a source of vanadium in an organic medium in the presence of
5 a phosphorus source, characterised in that the organic medium comprises
(a) isobutyl alcohol or a mixture of isobutyl alcohol and benzyl alcohol and
(b) a polyol
in the weight ratio (a) to (b) of 99:1 to 5:95.
- 10 2. The process of claim 1, wherein the source of vanadium is a compound of tetravalent or pentavalent vanadium.
3. The process of claim 2, wherein the source of vanadium is vanadium pentoxide.
- 15 4. The process of any one of claims 1 to 3, wherein the phosphorus source is phosphoric acid.
5. The process of any one of claims 1 to 4, wherein the component (a) of the organic medium is isobutyl alcohol.
- 20 6. The process of any one of claims 1 to 5, wherein the polyol is a C_{2-6} aliphatic polyol.
7. The process of claim 6, wherein the C_{2-6} aliphatic polyol is a C_{2-6} -alkanediol, preferably a C_{2-4} -alkanediol.
- 25 8. The process of any one of claims 1 to 7, wherein the reaction takes place at a temperature of 90 °C to 200 °C.
9. A vanadium/phosphorus mixed oxide catalyst precursor, obtainable from a process
30 according to any one of claims 1 to 8 and having a carbon content in the range of 0.7 wt.% to 15 wt.%.

10. The vanadium/phosphorus mixed oxide catalyst precursor of claim 9, wherein after an additional treatment at 300 °C for 3 hours in air the carbon content is between 0.7 wt.% and 3 wt.%.
- 5 11. The vanadium/phosphorus mixed oxide catalyst precursor of claim 10, wherein the carbon content is between 0.8 wt.% and 1.5 wt.%
12. A process for the transformation of the catalyst precursor of claim 9 into an active catalyst for the production of maleic anhydride, which process comprises a heat treatment of the catalyst precursor at temperatures of up to 600 °C.
- 10 13. The process of claim 12 wherein the heat treatment comprises the steps of
- (a) heating the catalyst precursor from room temperature to a precalcination temperature of about 300 °C in air or oxygen-depleted air
 - 15 (b) keeping at said precalcination temperature,
 - (c) further heating the precalcined catalyst precursor in nitrogen up to a calcination temperature of about 550 °C and
 - (d) keeping at said calcination temperature.
- 20 14. An active catalyst for the production of maleic anhydride, obtainable by the process of claim 12 or 13.
15. A process for the production of maleic anhydride, which comprises converting a feeding gas comprising a non-aromatic hydrocarbon having at least 4 carbon atoms and oxygen in
- 25 the presence of the active catalyst of claim 14 at a temperature from 320 °C to 500 °C.
16. The process of claim 15 wherein the non-aromatic hydrocarbon is *n*-butane.